

CLAIM AMENDMENTS

Claims 1-10 (cancelled):

Claim 11 (new): A button control for use in game control consoles, comprising a button, a rubber member located underneath said button and installed on a printed circuit board, and inside said rubber member providing a conducting element facing apart from and relative to a resistor strip provided on said printed circuit board, with the following characteristics: variation in an angle of a displacement of said button varying an amount of contact between said conducting element and said resistor strip on said printed circuit board and thereby varying a magnitude of output signals, wherein said button is equipped with a pivot.

Claim 12 (new): A button control for use in game control consoles, comprising a button, a rubber member located underneath said button and installed on a printed circuit board, and inside said rubber member providing a conducting element facing apart from and relative to resistor strip provided on said printed circuit board, with the following characteristics: variation in an angle of a displacement of said button varying an amount of contact between said conducting element and said resistor strip on said printed circuit board, and said resistor strip is a cut-open or non-continuous structure so that when said conducting element is first pressed down and in contact with said resistor strip, a resistance value across said resistor strip decreases from infinite value to a maximum value for easy reading of a button status, and a gradual depression of said button downward results in variation of said amount of contact between said conducting element and said resistor strip on said printed circuit board and thereby varying a magnitude of output signals, wherein said button is equipped with a pivot.

Claim 13 (new): An output signal control arrangement for button control of game control console, comprising:

a sensitive member comprising first and second electric terminals connected thereto; and

a control member supported in a movable manner between a first position and a second position with respect to said sensitive member, wherein a variation in position of said control member between said first position and said second position with respect to said sensitive member results in varying analog signal output; and

means for generally retaining said control member at said first position and retracting said control member from any said variation of position between said first position and said second position back to said first position.

Claim 14 (new): The output signal control arrangement, as recited in claim 13, wherein said control member comprises a conducting element and said sensitive member comprises a resistance sensitive element, wherein said first and second electric terminals are connected with said resistance sensitive element and said first and second positions are a maxi-resistance position and a mini-resistance position respectively, wherein said resistance sensitive element is supported in a movable manner between said maxi-resistance position and said mini-resistance position with respect to said resistance sensitive element, wherein said conducting element is retained at said maxi-resistance position with respect to said resistance sensitive element and a conductance between said first and second electric terminals is maximized, wherein when said conducting element is moved to said mini-resistance position, said conductance between said first and second electric terminals is minimized, therefore a variation in position of said conducting element between said maxi-resistance position and said mini-resistance position with respect to said resistance sensitive element results in varying an analog signal output.

Claim 15 (new): The output signal control arrangement, as recited in claim 14, further comprising:

a printed circuit board, wherein said resistance sensitive element is provided thereon; and

a button, which is supported on top of said printed circuit board, wherein said conducting element is mounted underneath facing said resistance sensitive element.

Claim 16 (new): The output signal control arrangement, as recited in claim 15, wherein said conducting element is a conductor and a pair of resistors is used to form said resistance sensitive element, wherein a stopper is mounted on said printed circuit board and said resistors is positioned at a lateral surface of said stopper, wherein said first and second electric terminals are connected from said resistors respectively to said printed circuit board, wherein when said button is pressed down, said conductors is capable of being driven to displace from an upper position that is said maxi-resistance position to a lower position that is said mini-resistance position where said conductor is

positioned below said resistors, therefore by moving said conductor above and below said resistors, a resistance value is varied to produce varying analog signals.

Claim 17 (new): The output signal control arrangement, as recited in claim 14, further comprising a casing and a button having one end inserted in said casing, wherein said conducting element is a conductor and a pair of resistors is used to form said resistance sensitive element, wherein a stopper is contained in said casing and said resistors is positioned at a lateral surface of said stopper, wherein said first and second electric terminals pass through said casing for external electrical connection, wherein said means is a spring contained in said casing and mounted between said button and an inner wall of said casing, wherein when said button is pressed down, said conductors is capable of being driven to displace from an upper position that is said maxi-resistance position to a lower position that is said mini-resistance position where said conductor is positioned below said resistors, therefore by moving said conductor above and below said resistors, a resistance value is varied to produce varying analog signals.

Claim 18 (new): The output signal control arrangement, as recited in claim 14, wherein said conducting element comprises a conducting element supported in a position facing said resistance sensitive element and defined a distance therebetween, wherein said resistance sensitive element comprises a sheet of piezoelectric-resistance element, wherein a contact area between said conducting element and said piezoelectric-resistance element varies according to a magnitude of a compression force applied on said conducting element against said piezoelectric-resistance element that results in a variation of a resistance between said first and second electric terminals, wherein when said conducting element is at said maxi-resistance position, said conducting element has no contact with said piezoelectric-resistance element and said resistance between said first and second electric terminals has a maximum resistance value, wherein when said conducting element is moved to said mini-resistance position, said conducting element is displaced to compress against said piezoelectric-resistance element until said conducting element has a maximum contact area with said piezoelectric-resistance element wherein said resistance between said first and second electric terminals has a minimum resistance value, therefore said contact area is in an inverse proportion to said resistance between said first and second electric terminals, wherein by varying said magnitude of said compression force of said conducting element against said piezoelectric-resistance element varies said contact

area between said conducting element and said piezoelectric-resistance element that controls a variation of said resistance between said first and second electric terminals between said maximum resistance value and said minimum resistance value and thus results in said varying of said analog signal output.

Claim 19 (new): The output signal control arrangement, as recited in claim 15, wherein said conducting element is made of deformable and electric-conducting material and supported below said button and defined a distance from said resistance sensitive element, wherein said resistance sensitive element comprises a layer of piezoelectric-resistance element attached on top of said printed circuit board, wherein a contact area between said conducting element and said piezoelectric-resistance element varies according to a magnitude of a depression force applied on said button that compresses said conducting element against said piezoelectric-resistance element and results in a variation of a resistance between said first and second electric terminals, wherein when said conducting element is at said maxi-resistance position, said conducting element has no contact with said piezoelectric-resistance element and said resistance between said first and second electric terminals has a maximum resistance value, wherein when said conducting element is moved to said mini-resistance position, said conducting element is displaced to compress against said piezoelectric-resistance element until said conducting element has a maximum contact area with said piezoelectric-resistance element wherein said resistance between said first and second electric terminals has a minimum resistance value, therefore said contact area is in an inverse proportion to said resistance between said first and second electric terminals, wherein by varying a compression pressure of said conducting element against said piezoelectric-resistance element varies said contact area between said conducting element and said piezoelectric-resistance element that controls a variation of said resistance between said first and second electric terminals between said maximum resistance value and said minimum resistance value and thus results in said varying of said analog signal output.

Claim 20 (new): The output signal control arrangement, as recited in claim 18, wherein said conducting element has a circular cone shape.

Claim 21 (new): The output signal control arrangement, as recited in claim 18, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks, wherein said contact area between said conducting element and said piezoelectric-

resistance element varies according to a number of said conducting tracks in contact with said conducting element.

Claim 22 (new): The output signal control arrangement, as recited in claim 20, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks, wherein said contact area between said conducting element and said piezoelectric-resistance element varies according to a number of said conducting tracks in contact with said conducting element.

Claim 23 (new): The output signal control arrangement, as recited in claim 17, wherein said means comprises a rubber member disposed below said bottom of said button and said conducting element is attached to a bottom surface of said rubber member.

Claim 24 (new): The output signal control arrangement, as recited in claim 19, wherein said conducting element has a circular cone shape.

Claim 25 (new): The output signal control arrangement, as recited in claim 23, wherein said conducting element has a circular cone shape.

Claim 26 (new): The output signal control arrangement, as recited in claim 19, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks, wherein said contact area between said conducting element and said piezoelectric-resistance element varies according to a number of said conducting tracks in contact with said conducting element.

Claim 27 (new): The output signal control arrangement, as recited in claim 24, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks, wherein said contact area between said conducting element and said piezoelectric-resistance element varies according to a number of said conducting tracks in contact with said conducting element.

Claim 28 (new): The output signal control arrangement, as recited in claim 25, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks, wherein said contact area between said conducting element and said piezoelectric-resistance element varies according to a number of said conducting tracks in contact with said conducting element.

Claim 29 (new): The output signal control arrangement, as recited in claim 18, wherein said sheet of piezoelectric-resistance element is a sheet of carbon ink.

Claim 30 (new): The output signal control arrangement, as recited in claim 20, wherein said sheet of piezoelectric-resistance element is a sheet of carbon ink.

Claim 31 (new): The output signal control arrangement, as recited in claim 19, wherein said sheet of piezoelectric-resistance element is a sheet of carbon ink.

Claim 32 (new): The output signal control arrangement, as recited in claim 24, wherein said sheet of piezoelectric-resistance element is a sheet of carbon ink.

Claim 33 (new): The output signal control arrangement, as recited in claim 25, wherein said sheet of piezoelectric-resistance element is a sheet of carbon ink.

Claim 34 (new): The output signal control arrangement, as recited in claim 19, further comprising one or more additional piezoelectric-resistance elements provided on said printed circuit board, one or more additional conducting elements made of deformable and electric-conducting material, and a rubber member disposed on said printed circuit board, wherein said button is a cross button which has two or more key ends and is pivotally supported on said rubber member which has two or more internal depressed portions indented on a bottom thereof, wherein said conducting elements are attached to said internal depressed portions respectively and face said piezoelectric-resistance elements respectively on said printed circuit board, wherein when said cross button is at said maxi-resistance position, said rubber member is not deformed and said conducting elements are not in contact with any of said piezoelectric-resistances, wherein said resistances of said piezoelectric-resistance elements are at maximum, wherein when one of said key ends is depressed towards said printed circuit board, said cross button pivots to an inclined position and one of said internal depressed portions, which is positioned near said key end being depressed, also deforms to an inclined condition, wherein an inner side of said conducting element attached to said internal depressed portion being inclined is inclined to contact with said respective piezoelectric-resistance element, wherein an increasing pressure applied on said key end substantially enlarges said contact area between said conducting element and said respective piezoelectric-resistance element until said conducting element is completely depressed against said respective piezoelectric-resistance element that results at a minimum resistance, wherein an reducing pressure applied on said key end reduces

said contact area between said conducting element and said piezoelectric-resistance element.

Claim 35 (new): The output signal control arrangement, as recited in claim 34, wherein each of said piezoelectric-resistance element is in strip form.

Claim 36 (new): The output signal control arrangement, as recited in claim 19, wherein said button has a sloped bottom surface, wherein when said button is gradually depressed towards said printed circuit board, said sloped bottom surface gradually deforms said conducting element that gradually enlarges said contact area between said conducting element and said piezoelectric-resistance element so as to cause variation in resistance value thereof.

Claim 37 (new): The output signal control arrangement, as recited in claim 23, wherein said button has a sloped bottom surface, wherein when said button is gradually depressed towards said rubber member, said sloped bottom surface of said button gradually deforms said rubber member that gradually enlarges said contact area between said conducting element and said piezoelectric-resistance element so as to cause variation in resistance value thereof.

Claim 38 (new): The output signal control arrangement, as recited in claim 36, wherein said piezoelectric-resistance element is in a strip form.

Claim 39 (new): The output signal control arrangement, as recited in claim 37, wherein said piezoelectric-resistance element is in a strip form.

Claim 40 (new): The output signal control arrangement, as recited in claim 36, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks.

Claim 41 (new): The output signal control arrangement, as recited in claim 37, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks.

Claim 42 (new): The output signal control arrangement, as recited in claim 23, wherein said rubber member has a sloped top surface, wherein when said button is gradually depressed against said sloped top surface of said rubber member, said button gradually deforms said rubber member that gradually enlarges said contract area between said conducting element and said piezoelectric-resistance element so as to cause variation in resistance value thereof.

Claim 43 (new): The output signal control arrangement, as recited in claim 42, wherein said piezoelectric-resistance element is in a strip form.

Claim 44 (new): The output signal control arrangement, as recited in claim 42, wherein said piezoelectric-resistance element comprises a plurality of conducting tracks.

Claim 45 (new): A method of varying a magnitude of a control signal outputting when a conducting element in contact with a resistor trip of a game control console, comprising a step of varying a displacement between said conducting element and said piezoelectric-resistance element of a printed circuit board of said game control console to a resistance value across said piezoelectric-resistance element between an infinite value and a maximum value so as to vary said magnitude of said control signal being outputted.

Claim 46 (new): The method, as recited in claim 45, after the displacement varying step, further comprising a step of varying an amount of contact between said conducting element and said piezoelectric-resistance element on said printed circuit board and thus varying said resistance value and said magnitude of said control signal being outputted.

Claim 47 (new): The method, as recited in claim 46, wherein the displacement varying step further comprises a step of depressing said conducting element towards said piezoelectric-resistance element on said printed circuit board.

Claim 48 (new): The method, as recited in claim 46, wherein the displacement varying step further comprises a step of compressing said conducting element against said piezoelectric-resistance element on said printed circuit board wherein while varying a compression pressure of said conducting element against said piezoelectric-resistance element varies said contact area between said conducting element and said piezoelectric-resistance element that controls a variation of said resistance value resulting in said varying of said control signal being outputted.

Claim 49 (new): A method for outputting at least a control signal varying in correspondence to a control button of a game control console, comprising the steps of:

(a) providing a sensitive member having a first electric terminal and a second electric terminal for transmitting said control signal;

(b) moving a control member between a first position and a second position with respect to said sensitive member to adjust a variation in position of said control member between said first position and said second position with respect to said sensitive member so as to vary said control signal transmitted between said first electric terminal and said second electric terminal responsively; and

(c) retracting said control member back to said first position from any said variation of position between said first position and said second position.

Claim 50 (new): The method, as recited in claim 49, wherein, in the step (a), said sensitive member comprises a resistance sensitive element and wherein said first and second electric terminals are connected with said resistance sensitive element and said first and second positions are a maxi-resistance position and a mini-resistance position respectively,

wherein, in the step (b), said control member comprises a conducting element and is supported in a movable manner between said maxi-resistance position and said mini-resistance position with respect to said resistance sensitive element, wherein said conducting element is retained at said maxi-resistance position with respect to said resistance sensitive element and a conductance between said first and second electric terminals is maximized, wherein when said conducting element is moved to said mini-resistance position, said conductance between said first and second electric terminals is minimized.

Claim 51 (new): The method, as recited in claim 50, before the step (c), further comprising a step of:

(i) electrically engaging said control member with said sensitive member, wherein when said control member moves from said maxi-resistance position along said sensitive member to said mini-resistance position, said conductance is reduced responsively from maximum to minimum that varies said control signal transmitted therethrough accordingly.

Claim 52 (new): The method, as recited in claim 49, wherein said conducting element is made of deformable and electric-conducting material and said resistance sensitive element comprises a layer of piezoelectric-resistance element attached on a printed circuit board, wherein a contact area between said conducting element and said piezoelectric-resistance element varies according to a magnitude of a depression force

applied on said button that compresses said conducting element against said piezoelectric-resistance element and results in a variation of a resistance between said first and second electric terminals.

Claim 53 (new): The method, as recited in claim 52, wherein, in the step (b), said control member is depressed toward said sensitive member, wherein when said conducting element is at said first position, said conducting element has no contact with said piezoelectric-resistance element and said resistance between said first and second electric terminals has a maximum resistance value, wherein when said conducting element is moved to said second position, said conducting element is deformed to compress against said piezoelectric-resistance element until said conducting element has a maximum contact area with said piezoelectric-resistance element wherein said resistance between said first and second electric terminals has a minimum resistance value, therefore said contact area is in an inverse proportion to said resistance between said first and second electric terminals, wherein by varying a compression pressure of said conducting element against said piezoelectric-resistance element varies said contact area between said conducting element and said piezoelectric-resistance element that controls a variation of said resistance between said first and second electric terminals between said maximum resistance value and said minimum resistance value and thus results in said varying of said output signal.